

Stochastic

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الاحتمال

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سنة 11

Q1: $S = \{1, 2, 3, 4, 5, 6\}$

$E_1 = \text{Even Number}$

$E_1 = \{2, 4, 6\}$

$P(E_1) = P(2) + P(4) + P(6)$
 $= 1/2$

Q2:

$A = \text{exactly one head.}$

$= \{HT, TH\}$

$P(A) = 4/9$

$B = \text{at least one head}$

$B = \{HH, TH, HT\}$

$P(B) = 8/9$

$A \cap B = \{TH, HT\}$

$P(A \cap B) = 4/9$

$A \cup B = \{TH, HT, HH\}$

$P(A \cup B) = 8/9$

Sample point	Probability
HH	4/9
HT	2/9
TH	2/9
TT	1/9

Q6:

$A: \text{at least one head}$

$A^c = \{TTTTTTTTTT$
 $TT\}$

$P(A^c) = \frac{1}{1024}$

$P(A) = 1 - \frac{1}{1024}$
 $= \frac{1023}{1024}$

Q5:

Mother's Age

↓(A)

≤ 17

white

Black

$18-19$

2%

2%

$20-28$

3%

2%

$20-28$

41%

17%

≥ 30

33%

5%

$S = \{(\leq 17, w), (\leq 17, B), (18-19, w), (18-19, B), (20-28, w), (20-28, B), (\geq 30, w), (\geq 30, B)\}$

$A = \{(\leq 17, A), (18-19, w), (20-28, w), (\geq 30, w)\}$

$B = \{(\leq 17, w), (\leq 17, B), (18-19, w), (18-19, B)\}$

$P(A) = 0.79$

$P(B) = 0.09$